

What is claimed is:

1. A semiconductor light emitting device comprising:
a package having two or more terminals;
two or more semiconductor devices mounted in the package to emit lights,
5 each having a predetermined wavelength; and
a molding unit mixed with a phosphor that is excited by the lights emitted
from the semiconductor devices to emit light having a wavelength different from
those of the lights emitted from the semiconductor devices.
- 10 2. The semiconductor light emitting device of claim 1, wherein the
semiconductor devices include two or more semiconductor device groups emitting
lights having a wavelength in a different visible ray range from each.
- 15 3. The semiconductor light emitting device of any one of claims 1 and
2, wherein the semiconductor devices includes one or more devices emitting blue
light and one or more devices emitting red light.
- 20 4. The semiconductor light emitting device of claim 3, wherein the
semiconductor device emitting blue light has a peak wavelength of about 430-
480nm.
- 25 5. The semiconductor light emitting device of claim 3, wherein the
semiconductor device emitting the red light has a peak wavelength of about 610-
700nm.
- 30 6. The semiconductor light emitting device of claim 1, wherein at
least one of the semiconductor devices emits light in an ultraviolet ray range.
7. The semiconductor light emitting device of claim 1, wherein the
molding unit is formed of a mixture of phosphor and a molding material, the
phosphor being designed to emit green light when it is excited by the light emitted
from the semiconductor device.
- 35 8. The semiconductor light emitting device of claim 7, wherein the
phosphor has an excitation wavelength of about 200-550nm and an emitting
wavelength of about 500-570nm.

5 9. The semiconductor light emitting device of claim 1, wherein the molding unit is formed of a mixture of phosphor and a molding material, the phosphor being designed to emit red light when it is excited by the light emitted from the semiconductor device.

10 10. The semiconductor light emitting device of claim 1, wherein at least one of the semiconductor devices emits light having a similar color to that of the light emitted from the phosphor.

15 11. The semiconductor light emitting device of claim 1, wherein the semiconductor devices include one or more red light emitting devices and one or more blue light emitting devices, and the phosphor is designed to emit green light when it is excited by the light emitted from the semiconductor devices, thus the semiconductor light emitting device radiates white light.

 12. The semiconductor light emitting device of claim 11, further comprising one or more green light emitting devices.

20 13. The semiconductor light emitting device of claim 1, wherein the semiconductor devices include one or more blue light emitting devices and one or more green light emitting devices, and the phosphor is designed to emit red light when it is excited by the light emitted from the semiconductor devices, thus the semiconductor light emitting device radiates white light.

25 14. The semiconductor light emitting device of claim 13, further comprising one or more red light emitting devices.

30 15. The semiconductor light emitting device of claim 1, wherein the semiconductor device include an LED.

 16. The semiconductor light emitting device of claim 1, wherein the semiconductor devices are connected to each other in series, in parallel, or in series-parallel.

35 17. A method for making a semiconductor light emitting device,

comprising the steps of:

mounting two or more semiconductor devices on a package having two or more terminals;

5 electrically connecting the semiconductor devices to each other using a conductive wire; and

forming a molding unit by molding a mixture of a phosphor and a transparent molding material, the phosphor being excited by the lights emitted from the semiconductor devices to emit light having a wavelength different from those of the lights emitted from the semiconductor devices.

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18. The method of claim 17, wherein the transparent molding material is selected from the group consisting of epoxy resin, urea resin, and silicone.

15 19. The method of claim 17, wherein the semiconductor devices comprise a blue chip having a peak wavelength of about 430-480nm and a red chip having a peak wavelength of about 610-700nm, and the phosphor has an excitation wavelength of about 200-550nm and an emitting wavelength of about 500-570nm.

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